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TITLE : MANUFACTURE OF NON-ORIENTED MAGNETIC STEEL SHEET

ABSTRACT : PURPOSE: To obtain the title non-oriented magnetic steel sheet having low iron loss and excellent magnetic flux density by hot-rolling, annealing, cold-rolling, and then again annealing a steel having specified contents of C, Si, Mn, P, S, Al, N, and Fe under specified conditions.

CONSTITUTION: A steel contg., by weight, 0.005–0.010% C, $\leq 1.5\%$ Si, 0.1–1.0% Mn, $\leq 0.15\%$ P, $\leq 0.01\%$ S, $\leq 0.3\%$ Al, $\leq 0.007\%$ N, the balance Fe, and inevitable impurity elements is refined into a slab. The slab is heated, hot-rolled, and then further hot-rolled in the temp. range from the median of the Ar_3 and Ar_1 to 750°C . The obtained hot-rolled band steel is briefly annealed for ≤ 5 min in the temp. range from Ar_1 to $(Ar_3+50^\circ\text{C})$, pickled, and then cold-rolled to a finishing thickness. The cold-rolled steel sheet is briefly decarburizing- annealed for 10sec to 5min in the temp. range below Ar_3 to reduce the C content to $<0.005\%$. By this method, a non-oriented magnetic steel sheet having low iron loss and excellent magnetic flux density is easily obtained.

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